D 12270 (Pages : 2) Name.....

Reg. No.....

FIRST SEMESTER P.G. DEGREE EXAMINATION, NOVEMBER 2021

(CCSS)

Applied Zoology

ZOO 1C 04—SYSTEMATICS AND ANIMAL BEHAVIOUR

(2019 Admissions)

Time : Three Hours Maximum : 80 Marks

Part A (Systematics)

I. Write an essay on any *one* of the following :

1 Write a concise account on different types of taxonomic characters.

2 Explain the various taxonomic impediments and their solutions.

(1 × 15 = 15 marks)

II. Write short essays on any *two* of the following :

3 Trace the history of zoological nomenclature.

4 Explain the different methods of identification in taxonomy.

5 Describe the importance and applications of taxonomy.

6 Elaborate on the ethical aspects of taxonomic publications.

(2 × 10 = 20 marks)

III. Write short notes on any *five* of the following :

7 Principle of priority.

8 Cytotaxonmy.

9 Ontological species concept.

10 Phenetic classification.

11 Monograph.

12 Levels of taxonomy.

13 Importance of taxonomic collections.

(5 × 3 = 15 marks)

Turn over

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Part B (Animal Behaviour)

IV. Write an essay on any *one* of the following :

14 Explain various aspects of pheromonal communication in mammals.

15 Elaborate on the role of genes in the development of behaviour.

(1 × 15 = 15 marks)

V. Write short notes on any *five* of the following :

16 Contributions of Karl Von Frisch to Ethology.

17 Neuroethology.

18 Factors influencing effects of hormones on behaviour.

19 Altruism.

20 Behaviourism.

21 Costs and benefits of social life.

22 Influence of environment on behaviour.

(5 × 3 = 15 marks)

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FIRST SEMESTER P.G. DEGREE EXAMINATION, NOVEMBER 2021

(CCSS)

Applied Zoology

ZOO 1C 03—BIOSPHERE ECOLOGY

(2019 Admissions)

Time : Three Hours Maximum : 80 Marks

I. Write essays on any *two* of the following. Each question carries 15 marks :

1 Enumerate the ecology of coral reefs with reference to functions, threats and management.

2 Explain the impacts of habitat degradation, loss and fragmentation on biodiversity.

3 Elaborate on cleaner technologies for waste management.

4 Explain the two global environmental issues you have studied.

(2 × 15 = 30 marks)

II. Write short essays on any *three* of the following. Each question carries 10 marks :

5 Write on the ecological impacts of GMOs.

6 Explain the consequences of human population growth. Suggest solutions to address the problem.

7 Explain the concept of biodiversity index. Write briefly on different biodiversity indices.

8 What is EIA ? Explain the procedures of EIA.

9 Write the applications of remote sensing for the study and management of ecosystems.

(3 × 10 = 30 marks)

III. Write short notes on any *five* of the following. Each question carries 4 marks :

10 Biomethanation.

11 UNFCCC.

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12 Simulation model.

13 The Coastal Zone Regulation Notification,1991.

14 Biomonitoring.

15 K-selection.

16 Topography and soil erosion.

17 Species, 2000.

(5 × 4 = 20 marks)

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D 12268 (Pages : 2) Name.....

Reg. No.....

FIRST SEMESTER P.G. DEGREE EXAMINATION, NOVEMBER 2021

(CCSS)

Applied Zoology

ZOO 1C 02—BIOPHYSICS AND BIOSTATISTICS

(2019 Admissions)

Time : Three Hours Maximum : 80 Marks

Part A (Biophysics)

I. Write an essay on any *one* of the following :

1 Write down the principle and applications of different electrophoretic methods.

2 Explain the principle and applications SEM and TEM.

(1 × 15 = 15 marks)

II. Write short essays on any *two* of the following :

3 Write the biophysical and chemical aspects of diffusion. Add a note on the application of diffusion processes in biology.

4 Write the principle and applications of paper chromatography.

5 Write on the various histochemical techniques.

6 Describe the principle and applications of X-ray crystallography.

(2 × 8 = 16 marks)

III. Write short notes on any *three* of the following :

7 Cerenkov radiation.

8 Confocal microscopy.

9 PET.

10 ECG.

11 Gas chromatography.

(3 × 3 = 9 marks)

Turn over

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Part B (Biostatistics)

IV. Write an essay on any *one* of the following :

12 What is statistical inference ? Write briefly on different approaches in statistical inference.

13 Describe various measures of dispersion.

(1 × 15 = 15 marks)

V. Write short essays on any *two* of the following :

14 Write an account on probability distribution.

15 What is Correlation ? Explain different graphical methods in correlation.

16 What is Mean ? Write on different kinds of mean. Mention their merits and demerits.

17 What is sampling ? Describe different sampling methods.

(2 × 8 = 16 marks)

VI. Write short notes on any *three* of the following :

18 Multivariate statistics.

19 Type I and Type II error.

20 Regression equation.

21 Attributes.

22 Kurtosis.

(3 × 3 = 9 marks)

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Name.....

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FIRST SEMESTER P.G. DEGREE EXAMINATION, NOVEMBER 2021

(CCSS)

Applied Zoology

ZOO 1C 01—BIOCHEMISTRY

(2019 Admissions)

Time : Three Hours Maximum : 80 Marks

I. Write an essay on any *two* of the following :

1 Write the classification and nomenclature of enzymes.

2 Explain glycolysis and its regulation.

3 Describe the biosynthesis of cholesterol.

4 Elucidate the structure and classification of amino acids.

(2 × 15 = 30 marks)

II. Write short essays on any *three* of the following :

5 Explain the pathway of glycogenolysis.

6 Describe the beta oxidation of saturated fatty acids.

7 Briefly explain the urea cycle.

8 Distinguish between competitive and non competitive inhibition of enzyme action with examples.

9 Explain the chemical properties of lipids. (3x10=30 marks)

III. Write short notes on any *five* of the following :

10 What is Ramachandran plot ?

11 Describe the clover leaf structure of tRNA.

12 What is chemiosmotic hypothesis ?

13 With a suitable example explain transamination.

14 Cite examples for the role of buffers in biological system.

15 What are peptide bonds ? Why peptide bonds have partial double bond character ?

16 How proline is different from other amino acids ?

17 A mixture of 0.20 M acetic acid and 0.30 M sodium acetate is given. Calculate the P^{H} of the medium if the P^{Ka} of the acetic acid is 4.76.

(5 × 4 = 20 marks)

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